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IRS' Redesign of Its Tax Administration System

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Information Management and
Technology Division

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The Honorable Dennis DeConcini
Chairman, Subcommittee on Treasury,
Postal Service and General Government
Committee on Appropriations
United States Senate

The Honorable Pete V. Domenici
Ranking Member, Subcommittee on Treasury,
Postal Service and General Government
Committee on Appropriations
United States Senate

In your December 22, 1986, and March 25, 1987, letters, you requested that we review the Internal Revenue Service's (IRS) Tax System Redesign, a major effort to overhaul the tax administration system. This report provides you with information on 1) IRS' need for Tax System Redesign; 2) the progress of and future plans for the redesign; and 3) the redesign's past and estimated future costs. We plan to provide the Subcommittee with an analysis of Tax System Redesign soon after IRS completes its initial phase of the redesign in early 1988.

IRS' Need and Objectives for Redesigning the Tax Administration System

In the late 1960's, IRS determined that its tax administration system was in need of redesign. The system, which structurally remains much the same today, consists of both manual and automated processes. Taxpayers typically file paper returns with 1 of 10 geographically dispersed service centers. Information from these returns is compiled on magnetic tapes and shipped to the National Computer Center where taxpayers' master file accounts are maintained. Then, selected taxpayer information is shipped back to the service centers for further processing and use in servicing taxpayers. According to IRS, this system prohibits ready access by employees to tax account data that is required to more adequately address taxpayer inquiries and meet other program needs.

In 1968, IRS initiated the Tax Administration System of the 1970's, a redesign effort with a major objective of providing IRS employees with more direct access to tax account data. This effort never progressed beyond the conceptual design stage. The White House Domestic Policy Planning Council canceled it in 1978 because of, among other factors, congressional concerns about adequate data security and the protection of taxpayers' privacy rights. (See appendix I.)

Although IRS has since enhanced the tax administration system by replacing computer equipment and improving software, the system's basic design has not changed. IRS believed (and continues to believe) that the design adversely affected its ability to carry out its mission, and in 1982, resurrected its redesign efforts through the program now known as Tax System Redesign. The program has maintained the following basic objectives 1) to introduce state-of-the-art computers and telecommunications technology; 2) to provide faster access to all taxpayer information; 3) to better link related information; and 4) to automate manual- and paper-intensive processes.

The Progress of and Plans for Tax System Redesign

Since Tax System Redesign's inception, IRS has pursued four approaches to meet redesign objectives. The current approach involves the agency evolving in phases toward a target system design, rather than implementing a one-time redesign of the entire system.

The redesign approaches pursued by IRS range from having private industry design and implement a new system to the current evolutionary plan, which depends heavily on the agency's own staff developing the system. One reason, according to an IRS official, that no single approach has progressed beyond the conceptual stage is that several leadership changes have occurred both within IRS and the Department of the Treasury. As a result, the approaches have varied in accordance with the preferences of leadership. Throughout these leadership changes, however, IRS and Treasury have generally agreed on the redesign objectives.

The Assistant Commissioner (Tax System Redesign),[1] appointed in October 1986, is a proponent of the evolutionary approach. A key element of the evolutionary approach is the establishment, in the long term (late 1990's), of five IRS-wide data bases. These data bases are to contain all information necessary to maintain accurate and timely tax accounts. IRS departments would be able to readily access and update data base information as needed through a telecommunications network.

As part of the redesign, IRS is currently pursuing several short-term initiatives, expected to be completed in the early 1990's. Some of these initiatives involve more fully automating functions that help IRS ensure

[1]On August 31, 1987, the name of the Office of the Assistant Commissioner (Tax System Redesign) was changed to the Office of the Assistant Commissioner (Information Systems Development).

compliance with the tax laws, while other initiatives focus on modernizing the input, storage, and retrieval of data. According to IRS, these initiatives will enable the agency to form the five data bases. Appendix II contains more detailed information on events related to the development of the redesign.

The agency has taken steps to implement the latest redesign approach. In October 1986, IRS established the Design Concept Task Force which has developed a draft target design. In January 1987, the agency designated the Assistant Commissioner's office as the focal point for introducing new technology and for ensuring compatibility among existing and future systems.

The projected date for the completion of Tax System Redesign's initial phase is February 1988. By then, IRS intends to have general and specific designs of how the system will function; a management plan; a transition plan identifying the redesign's implementation sequence and target dates; and an acquisition strategy establishing policies for procuring hardware, software, and related services. Although Treasury has endorsed the current evolutionary approach, it is not expected to formally approve the approach until IRS completes the above mentioned designs and plans.

The Past and Estimated Future Costs of Tax System Redesign

For fiscal years 1982 through 1988, IRS has obligated, or plans to obligate, about $71 million on Tax System Redesign. Through fiscal year 1986, IRS obligated and spent $15.5 million. This was for such activities as establishing and operating the redesign office, developing the redesign approaches, contracting for the documentation of the current tax adminstration system, and testing new technologies.

IRS plans to obligate $20.2 million for fiscal year 1987 and $35.1 million for fiscal year 1988. Consistent with the evolutionary approach, the planned obligations are for such activities as developing the long-term redesign and managing the short-term initiatives.

Actual and planned obligations for the redesign are approximately $13 million less than the $83.6 million budget submissions to the Congress since fiscal year 1982. These obligations have been less, primarily because changes to the redesign approach have slowed progress. While precise future obligations for Tax System Redesign cannot be calculated, IRS is projecting over $1 billion for the redesign between fiscal years 1989 and 1992 and $4.4 billion over the life of the system. Appendix III

contains more information on the past and estimated future costs of the redesign.

Objectives, Scope, and Methodology

To obtain information on IRS' need and objectives for Tax System Redesign and the progress and future plans regarding this redesign effort, we 1) reviewed documents, such as mission need statements, management plans, and correspondence between IRS and Treasury and 2) interviewed officials from the Office of the Assistant Commissioner (Tax System Redesign) and the Office of the Deputy Assistant Secretary of the Treasury for Information Management. To obtain information on the project's cost, we 1) reviewed budget formulation and execution documents and 2) interviewed officials from IRS' Offices of the Assistant Commissioner for Tax System Redesign, Computer Services, and Planning, Finance and Research, and Treasury's Office of the Deputy Assistant Secretary for Departmental Planning and Finance.

Agency Comments

IRS provided formal comments in a letter dated September 17, 1987 (see appendix IV) and agreed with our presentation of the facts. We clarified our discussion of capacity enhancement as requested by IRS in its response. (See appendix II, page 17.) The agency comments also furnished information to supplement our chronology (see appendix II).

As arranged with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from its issue date. We will then send copies of this report to the Chairman, Subcommittee on Oversight, House Committee on Ways and Means; the Secretary of the Treasury; and the Director, Office of Management and Budget. We will also make copies available to others upon request. If you have any questions or desire additional information, please contact me or Theodore F. Gonter, Group Director, on 275-3455.

James R. Watts

James R. Watts
Associate Director

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Abbreviations

GAO	General Accounting Office
IMTEC	Information Management and Technology Division
IRS	Internal Revenue Service
OMB	Office of Management and Budget
TAS-70	Tax Administration System of the 1970's

IRS' Need for Redesigning the Tax Administration System

Background

The automated tax administration system is the Internal Revenue Service's (IRS) primary method of confirming and maintaining accounts of taxpayer's voluntary compliance with tax laws and regulations. The initial automation of portions of this system were based on a plan approved by the Congress in 1959. The plan had the following two components when it was implemented in the early 1960's 1) an input processing system installed on computers in each of IRS' 10 service centers and 2) a master file of tax records maintained at a centrally located computer center.

Since its inception, the system has operated in the same basic manner. Taxpayers typically submit their tax information on paper to geographically dispersed service centers where hundreds of personnel enter the data into computers that process the data onto magnetic tapes. The tapes are sent daily to Washington, D.C., where couriers transport them to the National Computer Center in Martinsburg, West Virginia, for sequential batch updating[1] of the master files. Selected information from these files is sent back on magnetic tapes to the appropriate service centers for further processing or use in servicing taxpayers.

The Tax Administration System of the 1970's

By the late 1960's, IRS recognized that its tax administration system needed to be redesigned. Although piecemeal enhancements had been made to the system over the years, they had resulted, according the agency, in duplication of effort and inefficient operations. A critical problem not addressed by the enhancements was the master file system design, which IRS cited as prohibiting ready access to tax account data needed to address taxpayer inquiries and meet other program needs.

Beginning in 1968, IRS sought to overcome the deficiencies of its system design. The agency initiated a project called the Tax Administration System of the 1970's (TAS-70). It specified two capabilities for the new system 1) immediate access to tax account data and the ability to locate all documents promptly with little or no generation of paper and 2) the ability to promptly or immediately process data into the system.

In the early 1970's, IRS developed a TAS-70 concept that called for a decentralized data base that would serve the 10 service centers, batch

[1]This process involves 1) accumulating and grouping data for future processing and 2) sorting that data in a particular sequence for processing against master files, on which data are also stored sequentially.

processing to update its data base, and an online[2] inquiry capability that would allow users to access the data base.

Between 1973 and 1977, IRS coordinated with the Department of the Treasury, the Office of Management and Budget, the General Services Administration, and the Congress to develop the Tax Administration System, which was estimated to cost $1.8 billion over a 12-year life. IRS first requested funds for the system in fiscal year 1977, but funding was denied by the Congress because of uncertainties over system costs and benefits. IRS again unsuccessfully requested funding in fiscal year 1978. Further problems developed in the wake of increasing congressional concern over whether the system, which would have involved using telecommunications to send massive amounts of data, would violate the privacy and rights of individuals as spelled out in the Privacy Act of 1974 and the Tax Reform Act of 1976. In 1978, the White House Domestic Policy Planning Council announced that it was no longer proceeding with TAS-70.

The Need for Tax System Redesign

After TAS-70 was terminated, IRS continued to enhance the existing system in order to meet frequent legislative changes, substantial work-load growth, and increasing program demands. IRS retained the design of its master file processing, but enhanced and replaced computer equipment to ensure effective operations. For example, the agency replaced its batch and online computer systems and a labor-intensive microfilm operation at each service center with new computers and technology and replaced the computers at the National Computer Center.

The agency also initiated the development of other systems to support specific functions, such as collection and examination. Though operable, these systems have never been integrated because of the design constraints of the master file processing system. Instead, they stand alone with only minimal access to the master files for periodic updates. As a result, agency users are confronted with taxpayer account data that differ in format, content, and degree of accessibility.

According to IRS, as a result of these numerous enhancements, its tax administration has evolved into a complex system plagued by problems. The system requires that a considerable amount of specialized processing be done to allow the computer programs to interact with existing systems. In addition, implementing systems piecemeal has resulted in

[2]Refers to a user's ability to access and interact with a computer via a terminal.

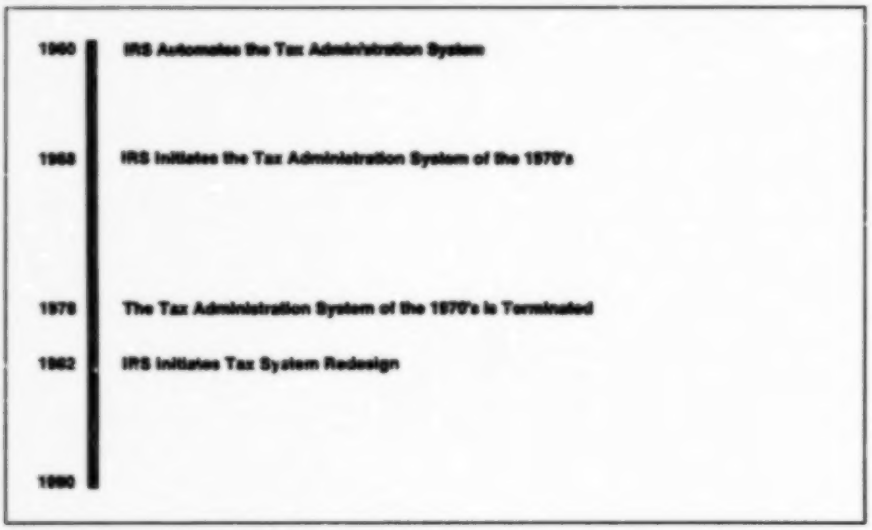
the processing and maintenance of redundant data. Due to numerous additions, the system has lost the flexibility IRS needs to readily adjust to changes in tax legislation.

Although the tax administration system has grown significantly since its inception, it is still based on 1950's design concepts. The design has caused problems which affect IRS' ability to provide high quality service. The problems the agency cites include:

- A limited amount of accounting information on each taxpayer in the computer system;
- Difficult and expensive access to large amounts of paper documents; and
- Slow access to tax information data because of a sequentially recorded master file.

During the early 1980's, IRS recognized that the tax administration system more than ever needed to be redesigned. The problems in accessing taxpayer account information that prompted the TAS-70 effort had been exacerbated by years of piecemeal enhancements and replacements. Thus, in the early 1980's, IRS renewed its efforts to redesign the tax administration system through Tax System Redesign. IRS' 20-year redesign effort is depicted in figure I.1.

Figure I.1: Overview of Redesign Efforts



Tax System Redesign Chronology

Since the early 1980's, the Internal Revenue Service (IRS) has been attempting to launch its latest effort to redesign the tax administration system. In August 1981, the IRS Commissioner's Special Automatic Data Processing Study Group reported that IRS should begin to develop a long-range data services plan that would take full advantage of currently available and forecasted technology without regard to its current operating methods. In August 1982, the Deputy Commissioner signed a charter formally establishing the Tax Processing System Redesign project. Organizationally, the project would be under the general direction of the IRS Assistant Commissioner (Computer Services). In the charter, IRS stated that "the current situation is such that our systems are inefficiently designed, difficult to maintain, and unable to take advantage of the features of state-of-the-art equipment." As detailed below, IRS has sequentially pursued four different approaches for redesigning the system. They are:

1) Using the Office of Management and Budget (OMB) Circular A-109 major systems acquisition guidelines to give private industry the opportunity to develop, refine, demonstrate, and implement a new design concept;

2) Contracting with a systems integrator who would act as the prime contractor and take responsibility for all redesign activities (ranging from holding a design competition to implementing the new system);

3) Blending, through an in-house effort, new tax processing system hardware with software to modernize the master file; and

4) Evolving in phases, through an in-house effort, toward a target system design featuring corporate (IRS-wide) data bases.

The following is a chronology of each of the four efforts to redesign the tax administration system.

Redesign Following OMB Circular A-109

August 1982

IRS initiates Tax Processing System Redesign by following the major systems acquisition guidelines specified in OMB Circular A-109. A major intent of these guidelines is to promote competition in private industry for developing, demonstrating, and implementing technically advanced and high-priced systems. As one of the first steps in the A-109 process, a Mission Need Statement is prepared by IRS for the Tax Processing System Redesign effort.

February 1983

Approved by the Department of the Treasury, Assistant Secretary (Administration), the Mission Need Statement identifies the Tax Processing System Redesign objectives as the need to:

- Update the 20-year-old system design with state-of-the-art technology in hardware, data storage, and data communications;
- Redesign the systems software and applications programs through the use of structured analysis, design, and programming techniques;
- Reprogram the systems, many of which are written in assembly language, using a higher-level language;
- Provide faster access to all account information;
- Provide for the computer linkage of related tax account data; and
- Provide for the automation of manual processes.

March 1983

Treasury creates the Office of the Assistant Secretary (Electronic Systems and Information Technology) to report to the department's Secretary. The office is to oversee and coordinate information systems, establish related policies, standards, and directives, and advise the Secretary and other senior officials at Treasury.

October 1983

Treasury appoints the first Assistant Secretary (Electronic Systems and Information Technology).

January 1984

IRS begins to obtain Treasury approval for the procurement process necessary to redesign the tax processing system. At this time, the procurement strategy strictly follows the A-109 guidelines and consists of two Requests for Proposals. One request is to solicit design concepts and to select about five concepts for further refinement. The second request is for a demonstration of at least two designs deemed to be the best in terms of cost and technical factors. The Tax Processing System Redesign project office plans to award a contract with a 20-year life to include renewable options at the end of 8 years and again at the end of 14 years.

In terms of project scope, a management plan submitted to Treasury states that vendors would be asked to review all tax processing systems at the service centers, National Computer Center, and various field locations. During this review, vendors are to look toward 1) redesigning those systems based on early technology and 2) integrating this redesign with the enhancements and additions that have occurred since the system was first installed. They are to focus on the automated tax processing system and its related manual processes.

Also during this month, Treasury approves IRS' use of a management consultant to furnish technical expertise in evaluating the proposed system designs, hardware, software, and communications.[1]

January 1984

IRS begins to question the A-109 approach because it appears costly and time-consuming. Thus, it requests that OMB cancel the requirement to follow A-109 guidelines. Despite a request from Treasury on behalf of IRS, OMB informs Treasury in March 1984 that it will not excuse IRS from following the guidelines. OMB acknowledges, however, that the interpretation of the circular is probably too rigid and that strict adherence is not required.

March 1984

Treasury returns the January 1984 procurement request package and recommends that IRS 1) delete references to A-109, 2) describe alternative acquisition approaches and, 3) describe the revised acquisition strategy.

[1]In approving the Mission Need Statement in February 1983, Treasury requires IRS to consult with and use technology futurists in the design concepts proposal phase. When IRS requests approval in November 1983 for a futurist/management services contract, Treasury approves only the management portion.

July 1984	Treasury appoints an Acting Assistant Secretary (Electronic Systems and Information Technology) to replace the departing official.
August 1984	IRS changes the name of the project from Tax Processing System Redesign to Tax System Redesign to emphasize that the project's scope is broader than simply the "processing" of tax return information.
October 1984	IRS receives Treasury approval to establish the Office of Assistant Commissioner (Tax System Redesign) under the Associate Commissioner (Data Processing).
November 1984	In response to Treasury's review of the January 1984 Tax System Redesign procurement package, IRS resubmits a modified package. With the modified package, IRS submits a new management plan and a requirements analysis. The management plan details a modified Circular A-109 acquisition strategy consisting of two procurement actions with two Requests for Proposals. One request is for soliciting design concepts and selecting an undetermined number of concepts for further refinement. The second request is for demonstrating that the single design selected is the best in terms of cost and technical factors. In terms of project scope, the plan states that design offerors would be encouraged to determine the feasibility of designing and implementing a single system to provide comprehensive tax information in an interactive work environment. With the modified procurement package, the Tax System Redesign Project Office submits to Treasury a requirements analysis. In this analysis, IRS makes several assumptions regarding the new system. For example, the system would: • Have a single, decentralized, logical data base with online access; • Have a nationwide IRS communications network linking all field offices to their respective processing sites and linking all processing sites to each other; • Use electronic filing of tax returns; • Use electronic funds transfer both to and from taxpayer accounts;

- Use knowledge-based systems,[2] when appropriate, to replace manual processes; and
- Modernize input processing.

Redesign Using a Systems Integrator

February 1985

Treasury informs IRS that it does not approve of the November 1984 procurement package and suggests that IRS not be limited to any one procurement methodology, such as Circular A-109. Instead, Treasury prefers a strategy involving a contract with an "integration business." Unlike the A-109 process, which would involve IRS' contracting with multiple firms to develop a system concept and possibly a different firm to implement the selected design, the systems integrator approach would involve using one firm in the prime contractor role. This firm would perform all roles—from holding the design concept competition to implementing the selected design.

April 1985

A new official is designated Acting Assistant Secretary (Electronic Systems and Information Technology) after the first acting official's departure.

IRS' Associate Commissioner (Data Processing) informs Treasury that IRS is moving toward a modular design of the redesign project.

June 1985

Treasury's Acting Assistant Secretary (Electronic Systems and Information Technology) discusses his views of the Tax System Redesign procurement strategy in a memorandum to IRS. He makes four points in the memorandum. First, he supports IRS' move to break the tax processing system into several modules that could be implemented incrementally. Second, he points out that IRS may need only one Request for Proposals if it could clearly define the scope of Tax System Redesign. Third, he suggests using a Request for Comment to obtain private industry views on the project. Finally, he reiterates the need to use a systems integrator

[2]Computer systems that perform at the level of a human expert in solving specific problems in specific situations.

in the Tax System Redesign prime contractor role rather than automated data processing manufacturers who would not be objective in designing the new system.

Treasury abolishes the Office of the Assistant Secretary (Electronic Systems and Information Technology) and delegates that office's responsibilities to the newly established Office of the Deputy Assistant Secretary (Management) for Information Systems within the Office of the Assistant Secretary for Management.

August 1985

Treasury appoints an Acting Deputy Assistant Secretary (Management) for Information Systems.

September 1985

The Tax System Redesign Project Office issues a new project concept entitled, "Conceptual Basis for Strategic Approach." In this document, IRS describes three alternative acquisition strategies. The strategy selected involves a single Request for Proposals with the early involvement of a systems integrator whose tasks would include:

- Conducting a design concepts competition,
- Conducting a demonstration of the design selected by IRS, and
- Implementing the system in a modular manner.

The potential role of the contractor is further specified in the Preliminary Statement of Work for the Systems Integrator. In addition to a systems integrator, IRS plans to use a management consultant for support throughout the acquisition process.

IRS appoints the first Assistant Commissioner (Tax System Redesign). It also awards a contract for an automated documentation system. This system, the Problem Statement Language/Problem Statement Analyzer, would be used as a tool to understand the current tax processing functions, and thus serve as a foundation for the redesign effort.

Treasury appoints a permanent Deputy Assistant Secretary (Management) for Information Systems.

October 1985

IRS submits to Treasury an approval package for acquiring the systems integrator. The package includes a revised Mission Need Statement, a

	Conceptual Basis for Strategic Approach paper, and a Preliminary Statement of Work for the Systems Integrator.
November 1985	IRS submits to Treasury an approval package for the management consultant. Before approving this request or the systems integrator request, Treasury asks IRS to provide more information in the form of a statement of operating concepts as the concepts relate to the proposed tax redesign system.

Redesign by Combining the Capacity Enhancement for the Processing System and Master File Modernization

December 1985	The Treasury Deputy Assistant Secretary (Management) for Information Systems disapproves the Tax System Redesign acquisition strategy that IRS submitted in October 1985. He informs IRS that project objectives specified in the Preliminary Statement of Work are too general and advises IRS that it, not a contractor, can best develop the project's goals, objectives, and requirements. He recommends that the project incorporate an interim hardware upgrade plan to achieve short-term results and to position IRS for a long-range implementation. For such an upgrade, he recommends reprogramming fiscal year 1986 Tax System Redesign funds.
February 1986	After disapproving the Tax System Redesign acquisition strategy, Treasury informs IRS that it is withholding programmatic approval of the Capacity Enhancement for the Processing System Request for Proposals. Essentially a hardware acquisition, this system is intended to provide the agency with the computer capacity needed to handle its tax processing work loads into the early 1990's when it would begin implementing Tax System Redesign. Treasury withholds approval because it believes

IRS needs to develop a comprehensive system plan addressing resolutions to major processing problems and longer range program objectives, from the information presented in support of this acquisition. Treasury also is not convinced from the material presented by IRS that IRS would run out of computer capacity or, if it did, that replacing computers would be the best solution.

April 1986

IRS responds to Treasury's disapproval of both the Tax System Redesign acquisition strategy and the Capacity Enhancement for the Processing System Request for Proposals. IRS informs Treasury that it plans an evolutionary approach to redesigning the computer-based tax administration system. Specifically, it plans to evolve to a state-of-the-art system that features "a decentralized and expanded master file operating out of a data base environment at each of the new computer facilities, with the ability to begin to serve users and taxpayers more effectively and efficiently by 1995." IRS would accomplish this by blending the objectives of the capacity enhancement effort with the master file modernization objectives of Tax System Redesign.

IRS delineates three major phases for dovetailing the Capacity for Enhancement Processing System and Tax System Redesign. During Phase 1, IRS would 1) acquire computer equipment and applications software for new computer facilities and 2) move service center real-time processing[3] at each of the 10 service centers to the new facilities. During Phase 2, IRS would decentralize the master file to the new computer facilities and migrate from the tape-bound master file to an online return information data base. During Phase 3, IRS would move the processing of tax returns to the new computer facilities and reduce the use of large manual, labor-intensive service center processing. This phase would also include the use of electronic funds transfer capabilities and laser technology for archival storage of tax information. IRS plans to issue a Request for Proposals to begin this redesign in fiscal year 1987.

IRS also informs Treasury of other significant actions, including:

- Reprogramming $6.4 million intended for the Tax System Redesign Request for Proposals into more immediate automated data processing needs;
- Deciding not to issue a tax redesign Request for Proposals for an overall manager or systems integrator; and

[3]Refers to the processing of data by a computer at the same time information is being keyed in.

- Delegating responsibility to the Assistant Commissioner (Tax System Redesign) for the automated data processing planning of tax processing and tax information initiatives to ensure integration of the tax processing system with applications systems being developed for such functions as tax return examination and tax collection.

May 1986	IRS appoints an Acting Assistant Commissioner (Tax System Redesign). Treasury informs IRS that it concurs with and supports the three phase Tax System Redesign plan delineated in April 1986. The Treasury Deputy Assistant Secretary (Management) for Information Systems fully supports IRS' plans to develop a revised master file concept using state-of-the-art data base management systems. However, he is concerned that many IRS staff appear to view the redesign project as merely a hardware project that includes a few modifications which permit some kind of rudimentary decentralization to three to five sites.
July 1986	OMB provides comments to Treasury regarding a Tax System Redesign project presentation. OMB states that it supports using in-house IRS expertise to design a new system rather than relying totally on the private sector. It is concerned, however, that the redesign alternative had been selected without appropriate analyses (for example, a cost/benefit analysis). OMB requests that Treasury develop an outline and schedule for developing a management plan. The plan should include, among other things, a clear statement of the current system's objectives and how they should be measured and a definition of the problem(s) to be solved.
August 1986	Treasury informs IRS that Treasury continues to be troubled by the lack of progress on the redesign project. Treasury's Deputy Assistant Secretary (Management) for Information Systems refers to a hardware acquisition plan he had seen that "looks a great deal like the Capacity Enhancement for the Processing System project, rather than an approach to pursue a truly redesigned system."

Redesign Using a Corporate Data Base Approach

October 1986

IRS appoints its second Assistant Commissioner (Tax System Redesign). He embraces an evolutionary approach to redesign whereby the redesign organization acts as a partner with IRS user and support organizations in managing automation initiatives related to specific functions and corporate (IRS-wide) enhancements.

The Tax System Redesign Design Concept Task Force is formed as a vehicle for IRS to internally develop a concept design from which a target design could be selected. According to its charter, the task force will initially consist of representatives from the Tax System Redesign, Computer Services, Examination, Returns and Information Processing, and Collection offices. They will develop the core system requirements and address the relationship of the redesign to systems being developed to automate the examination and collection processes. When the requirements are completed, the data processing requirements of the other functional users (for example, Criminal Investigation and Appeals) will be documented.

January 1987

IRS' Automation Policy Board, composed of agency executives who formulate automated data processing policy, designates the Assistant Commissioner (Tax System Redesign) as the focal point for introducing new technology and ensuring compatibility among existing and future systems. The Assistant Commissioner (Tax System Redesign) presents the Statement of Operating Responsibilities during the Policy Board's meeting. According to this document, the Assistant Commissioner (Tax System Redesign) will function on behalf of the Board in carrying out the following responsibilities:

- Acting as a partner in managing IRS' user and support organizations to ensure, for example, that automation initiatives related to specific IRS programs (such as collection and examination) and corporate enhancements are designed for integration into a redesigned tax administration system;
- Managing the logical and physical design of the corporate tax processing system and the development of a transition plan, acquisition strategy;

and implementation plan that will result in a redesigned tax administration system with the full integration of functional user capabilities;
- Functioning as the Information Systems Manager for IRS' tax processing system and developing data administration requirements governing initiatives IRS-wide; and
- Operating as project manager for special tax processing systems enhancements as directed by the Automation Policy Board.

At this January 1987 Automation Policy Board meeting, the Assistant Commissioner presents a target design for IRS' future tax administration system, prepared by the Design Concept Task Force. The design concept's central element is a corporate data base that would encompass all the commonly used information for tax administration. The corporate data base would consist of five components: a tax information data base; a document image data base; a reference data base; an information documents data base; and a management information systems data base. Below the corporate level, user organizations will have the option of setting up data bases to control organization-specific information. To achieve the long-term target design, the Assistant Commissioner plans to coordinate short-term initiatives, such as the Electronic Filing System (which allows taxpayers to file returns on electronic media) and the Files Archival Image Storage and Retrieval System (which uses digital optical technology to convert, store, and use tax return images in place of paper returns).

The Assistant Commissioner also informs the Board during the January meeting that the initiation phase of the redesign effort, the first phase of the system development methodology process, will be completed by February 1988. At that time, the redesign effort will have four documents: a logical design, a physical design, a transition plan, and an acquisition strategy.

IRS furnished additional information on its redesign activities since January 1987 to supplement this chronology (see appendix IV).

Tax System Redesign Estimated and Actual Expenditures

Table III.1: Comparison of Tax System Redesign Budget Estimates With Actual or Planned Obligations for Fiscal Years 1982-1988[a]

Fiscal Year[b]	Budget Submissions	Actual or Planned Obligations[c]	Differences Increase/ (Decrease)
1982-1983	$266,000	$449,000	$183,000
1984-1985	14,492,000	6,955,000	(7,537,000)
1986	14,080,000	8,108,000	(5,972,000)
1987	16,714,000	20,204,000	3,490,000
1988	38,016,000	35,092,000	(2,924,000)
Total	**$83,568,000**	**$70,808,000**	**($12,760,000)**

[a]IRS furnished the estimates and obligations; we did not independently verify them.

[b]Actual obligations are reflected for fiscal years 1982 through 1986; planned obligations are reflected for fiscal years 1987 and 1988.

[c]See Tables III.2-III.6 (pp. 23 through 27) for the chronology and costs of fiscal years 1982-1988.

Table III.2: Chronology of Estimated and Actual Obligations and Actual Expenditures for Tax System Redesign for Fiscal Years 1982 and 1983[a]

Chronology	Amount
January 1982	
Tax System Redesign was established as a project office in August 1982 under the Assistant Commissioner (Computer Services), therefore, no separate fiscal year 1982 budget was submitted for Tax System Redesign. However, IRS estimated obligations for establishing the project office and for developing the initial redesign strategy in fiscal year 1983. These estimates were included in the Computer Services budget submission.	$266,000
January 1983	
Estimated obligations increased because of additional project office personnel and related costs.	185,000
August 1983	
Planned obligations were reduced primarily because of lower than anticipated personnel costs.	(19,000)
Sum of estimated obligations for fiscal years 1982 and 1983.	**$432,000**
September 1983	
Total amounts obligated for fiscal years 1982 and 1983 were $29,000 and $420,000 respectively—primarily for project office personnel and related support costs. These amounts also reflect actual expenditures.	$449,000
September 1983	
The difference between the estimated and actual obligations ($432,000 vs. $449,000) was funded from other Assistant Commissioner (Computer Services) projects and programs.	($17,000)

[a]IRS furnished the estimates and obligations; we did not independently verify them.

Table III.3: Chronology of Estimated and Actual Obligations and Actual Expenditures for Tax System Redesign for Fiscal Years 1984 and 1985[a]

Chronology	Amount[b]
January 1983 and 1984	
Tax System Redesign was elevated to an Assistant Commissioner's office in October 1984, but remained under the Assistant Commissioner (Computer Services) for budgetary and accounting purposes through fiscal year 1985. The estimated obligations for fiscal years 1984 and 1985 include $8.4 million for IRS personnel costs and $6.1 million for contracted-out automated data processing services. These obligations were planned in conjunction with Tax System Redesign's strategy to develop the redesign primarily through the automated data processing industry.	$14,492,000
September 1984 and 1985	
The reduction in planned obligations was due largely to the lack of progress in developing the redesign strategy to the satisfaction of IRS, Treasury, and OMB. The IRS personnel costs were therefore reduced and the contracted-out services not obligated in these years. Fiscal year 1984 planned obligations of $2,884,000 were converted to "no-year" funds for potential future contracts. IRS used fiscal year 1985 planned obligations of $2,676,000 to fund the service center operations and the Automated Examination System project, both of which were in danger of exceeding their available funding.	(7,704,000)
Total of estimated obligations for fiscal years 1984 and 1985.	**$6,788,000**
September 1984 and 1985	
These actual obligations were for Tax System Redesign personnel and personnel-related costs to develop the initial strategies and establish the Assistant Commissioner's office. These amounts also reflect actual expenditures.	$6,955,000
September 1984 and 1985	
The difference between planned and actual obligations is due to variances between the estimated and actual personnel costs. The difference was funded from other Assistant Commissioner (Computer Services) programs and projects that experienced lower than anticipated personnel costs.	($167,000)

[a]IRS furnished the estimates and obligations; we did not independently verify them.

[b]An additional balance of $999,000 of "no-year" funds remained unobligated at the end of the fiscal year. As described above, during fiscal year 1984, Tax System Redesign converted $2,884,000 to "no-year" funds. Tax System Redesign absorbed a $1,600,000 cut of automated data processing funds out of these "no-year" funds with the remaining $1,284,000 unobligated at the end of fiscal year 1984. This balance was decreased by $285,000 during fiscal year 1985 for obligations made in establishing the project office and are included in the total obligations ($6,955,000) shown above. The remaining balance of $999,000 was carried forward to fiscal year 1986.

Table III.4: Chronology of Estimated and Actual Obligations and Actual Expenditures for Tax System Redesign for Fiscal Year 1986[a]

Chronology	Amount[b]
January 1985	
This is the amount that IRS included for the redesign in its budget submisson to the Congress for fiscal year 1986. These estimated obligations were for the development of alternatives for redesigning the tax processing system and included $10 million for contracted-out automated data processing services and about $4 million for IRS personnel costs.	$14,080,000
January 1986	
The additional funds identified for the redesign came primarily from a transfer of funds from the Office of the Assistant Commissioner (Computer Services), who previously had responsibility for Tax System Redesign as a project office.	1,151,000
March 1986	
The estimated obligations were reduced because Treasury rejected IRS' planned redesign strategy in December 1985. These funds were applied to other major automated data processing initiatives.	(6,400,000)
April 1986	
These are additional funds identified for the redesign. These funds were for a planned increase in IRS personnel costs and were primarily transferred from the Automated Examination System.	1,056,000
September 1986	
Estimated obligations were reduced because of delays in developing a redesign strategy acceptable to Treasury. These funds were used primarily for other automated data processing projects and programs.	(1,760,000)
Total of estimated obligations for fiscal year 1986.	**$8,127,000**
September 1986	
These are actual obligations for the development of the redesign strategy, documentation of the current tax system, and a pilot test involving the electronic filing of tax returns. They also reflect actual expenditures.	$8,108,000
September 1986	
The remaining balance—personnel and travel costs—was less than anticipated. This balance was absorbed by other automated data processing projects.	$19,000

[a]IRS furnished the estimates and obligations; we did not independently verify them.

[b]An additional balance of $3,308,000 of "no-year" funds remained unobligated at the end of the fiscal year. At the beginning of fiscal year 1986, Tax System Redesign had a "no-year" fund balance of $999,000. Only $56,000 of that balance was obligated in fiscal year 1986 and is included in the actual obligations ($8,108,000) as shown above. The remaining $943,000 balance was increased by $600,000 during the fiscal year when funds were transferred to Tax System Redesign along with responsibility for the electronic filing system pilot test; and by $1,765,000 when "no-year" funds were transferred to Tax System Redesign along with the responsibility for the laser disk pilot test. This $3,308,000 of "no-year" funds is expected to be obligated in fiscal year 1987.

Table III.5: Chronology of Estimated Obligations for Tax System Redesign for Fiscal Year 1987[a]

Chronology	Amount[b]
January 1986	
This is the amount that IRS included for the redesign in its budget submission to the Congress for fiscal year 1987. It includes $5.7 million for contracted-out automated data processing services and approximately $11 million for IRS personnel costs.	$16,714,000
January 1987	
Estimated obligations were reduced basically because of adjustments in the personnel costs anticipated to develop the redesign concept.	(1,427,000)
March 1987	
The increase in estimated obligations was associated with the Assistant Commissioner (Tax System Redesign) assuming responsibility for a laser disk technology pilot test, an underreporter program system development, and an electronic filing pilot test.	306,000
March 1987	
Planned obligations were reduced to absorb Tax System Redesign's proportional share of a budget reduction in all automated data processing projects and programs.	(1,197,000)
April 1987	
"No-year" funds were provided in prior years' appropriations, and were expected to be obligated in fiscal year 1987 for further documentation of the current system and pilot tests of the planned electronic filing and laser disk systems.	3,308,000
May 1987	
Additional funds were estimated to be needed by the Assistant Commissioner (Tax System Redesign) to fund the planned acceleration in the pilot test of the electronic filing system. Funds for this purpose may be made available from other IRS automation projects.	2,500,000
Total of estimated obligations for fiscal year 1987.	**$20,204,000**

[a]IRS furnished these estimates; we did not independently verify them.

[b]At the beginning of fiscal year 1987, Tax System Redesign had a "no-year" fund balance of $3,308,000, which is expected to be obligated in fiscal year 1987 and is, therefore, reflected in the estimated obligations above.

Table III.6: Chronology of Estimated Obligations for Tax System Redesign for Fiscal Year 1988[a]

Chronology	Amount[b]
January 1987	
This is the amount that IRS included for the redesign in its fiscal year 1988 budget submission to the Congress. This estimated obligation includes $23.6 million to develop the redesign strategy and various concept, management, and transition plans. These planned obligations also include $1.4 million to develop an underreporter program prototype system; $10 million for an electronic filing system pilot test; and $3 million for further pilot testing of laser disk technology.	$38,016,000
March 1987	
This reduction in planned obligations was made to absorb Tax System Redesign's proportional share of an Office of Management and Budget cut of $49 million. The cut was made to IRS' information systems budget prior to its submission to the Congress but had not been allocated to the automated data processing initiatives within that budget. The Assistant Commissioner (Tax System Redesign) does not anticipate a programmatic impact if the $2,500,000 electronic filing needs for fiscal year 1987 can be funded.	(2,396,000)
May 1987	
This planned reduction in estimated obligations was due to a $190,000 reduction in anticipated personnel costs and a $338,000 reduction to absorb Tax System Redesign's proportional share of Federal Employee Retirement System costs.	(528,000)
Total of estimated obligations for fiscal year 1988.	**$35,092,000**

[a]IRS furnished these estimates; we did not independently verify them.

[b]At the beginning of fiscal year 1988, Tax System Redesign is not expected to have a "no-year" fund balance. All funds are expected to be obligated in fiscal year 1987.

Agency Comments

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

COMMISSIONER

SEP 17 1987

Mr. William J. Anderson
Assistant Comptroller General
General Government Division
United States General Accounting Office
Washington, DC 20548

Dear Mr. Anderson:

We appreciate the opportunity to review your recent draft Fact Sheet on "ADP Modernization: IRS's Redesign of Its Tax Administration System".

We have reviewed the draft Fact Sheet and found the information contained in the report to be a well-presented, technically-correct description of the history of Tax System Redesign (TSR). However, in the discussion of the Capacity Enhancement for the Processing System (CEPS) proposal (page 27 of the GAO Fact Sheet), it should be noted that Treasury withheld approval of the CEPS proposal primarily because of incomplete information on capacity.

The Fact Sheet's Appendix II "Tax System Redesign Chronology" details events related to the development of the redesign through January 1987. We believe great strides have been made in FY 1987 toward the ultimate redesign of the tax administration system following the January 1987 Automation Policy Board approval of the Assistant Commissioner's "Statement of Operating Responsibilities." In carrying out these responsibilities some of the major activities which have taken place include:

In June 1987, TSR arranged the first meeting of all Project Managers of the major ADP initiatives within the Service. This meeting marked the beginning of a new, concerted effort to establish meaningful coordination among initiatives which previously were perceived to be stand-alone systems. Equally important, this meeting signaled the beginning of a conceptual shift, across organizational lines, toward ensuring the integration of departmental projects into a total, unified redesign effort. It also reinforced the importance of intense user involvement and participation in corporate systems development.

Mr. William J. Anderson

- A Preliminary Design Concept Paper was developed and distributed to all field and National Office officials and to Counsel and Treasury for their review and comment. The conceptual design was modified based on this feedback. The Design Concept Paper is undergoing its last revision prior to Service-wide distribution in September, as an appendix to the Management Plan.

  A draft Management Plan was begun during the first part of 1987. This Plan now contains a comprehensive description of the proposed systems architecture and as a result of these architectures, we have already made significant progress in our effort to consolidate and improve the quality of input processing initiatives. On September 3, this version was presented to all Assistant Commissioners and the Commissioner and Treasury officials were briefed on its contents on September 4. On October 6, 1987, the Plan will be presented on the Office of Management and Budget (OMB).

- In June 1987 a reorganization of Tax System Redesign was implemented to facilitate effective progress toward the redesign. An important part of the reorganization was the establishment of the Office of Standards and Data Administration which will establish and maintain standards that will govern all ADP and data communications network development within IRS and will administer the Service's information resources.

- In FY 1987, the Service's electronic filing initiative was a major area of emphasis; in 1988 further expansion of the nationwide coverage of EFS is planned.

- Another TSR project, the Automated Underreporter Program, deals with those taxpayers who fail to report some or all of their income. TSR is working to replace the existing manual processes typifying this program with an on-line data base system. An automated underreporter prototype is currently under development at the Ogden Service Center. After development, this new system is scheduled for expansion to all service centers for production beginning in late FY 1989.

Mr. William J. Anderson

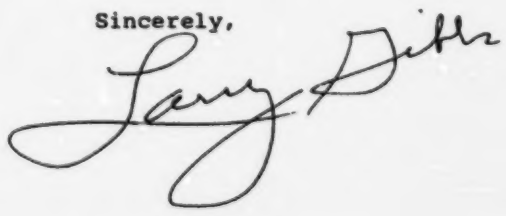
We have provided GAO staff with a detailed chronology intended to update events which have occurred since the conclusion of GAO's review (update of information contained in Appendix II "Tax System Redesign Chronology"). We believe it is important that this information be included in the report in order to depict the most current and, in our opinion, the most active and productive phase of Tax System Redesign.

Throughout the Service, we have witnessed not only a cohesive commitment to change, but a true sense of purpose and dedication to the success of redesign. Clearly, the resources expended on TSR in its early stages provided the foundation and paved the way for this most recent phase of rapid growth, progress and development. We are beginning to reap the benefits of that investment and to ensure that future investments, which must be made to bring the redesign to full fruition, will provide even greater returns for generations yet to come.

We hope these are useful in preparing your final report.

With best regards,

Sincerely,



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